

42. Apparatus for performing ophthalmological surgery to reduce an ascertained astigmatic condition by selective ablation of the anterior surface of the cornea with varied penetration up to a predetermined maximum penetration into the stroma to achieve an anterior-curvature change by volumetric removal of tissue within the optically functioning area of the cornea, said apparatus comprising: a laser producing a laser beam in the ultraviolet region of the electromagnetic spectrum; means for shaping, focusing and directing the beam toward the cornea with an intensity to produce tissue penetration to a depth per unit time exposure which is but a fraction of said predetermined maximum; said means including means for selectively (a) determining and controlling one rectangular area of exposure to the extent of at least said fractional depth and (b) determining and controlling a different rectangular area of exposure to the extent of at least said fractional depth, said rectangular areas being of varying width and symmetrical about a central axis through the optical axis of the cornea and oriented in accordance with the ascertained astigmatic condition; whereby the cumulative penetration of the cornea for both said areas of exposure can effect an astigmatism-reducing corrective change in the curvature of the cornea. --

REMARKS

The present amendments add claims 29 to 60 which are identical to the allowed claims of applicant's parent application, Serial No. 746,330, all except for claim numbering. For ease of cross-reference, we tabulate below the correspondence between claim numbers in the present case and those in said parent application.

[F.6083]
New Claim Numbers in This
Application

29, independent
30, subordinate 29
31, "
32, "
33, "
34, "
35, "
36, "
37, subordinate 36
38, subordinate 29
39, "
40, "
41, "
42, "
43, "
44, "
45, independent
46, "
47, "
48, "
49, "
50, "
51, "
52, "
53, "
54, "
55, "
56, "
57, "
58, "
59, "
60, "
61, "
62, "

[F.5049]
Allowed Claim Numbers in Parent
Application (Serial No. 746,330)

36, independent
2, subordinate 36
3, "
4, "
5, "
10, "
11, "
13, "
26, subordinate 13
27, subordinate 36
28, "
29, "
30, "
31, "
32, "
33, "
37, independent
38, "
39, "
40, "
41, "
42, "
43, "
44, "
45, "
46, "
47, "
48, "
49, "
50, "
51, "
52, "

The addition of claims 29 to 60 reflects applicant's intent to have said allowed parent claims survive in the present C.I.P. application, it being noted that their allowable nature is now of record in said parent application (i.e., based on applicant's original disclosure of Serial No. 552,983, filed November 17, 1983); a Notice of Express Abandonment of said parent application, Serial No. 746,330 is being filed on even date herewith, and a copy thereof is annexed to the present Amendment.

Attention is called to the fact that claims 51 to 60 (corresponding to parent Serial No. 746,330 claims 43 to 52) are independent claims which follow a pattern discussed at page 8 of the "Remarks" in the Supplementary Amendment of April 27, 1987 in said parent application Serial No. 746,330. We restate this pattern, as applicable to present claim numbers, as follows:

- New claim 51, myopia-reducing, with pulsed laser.
- New claim 52, myopia-reducing, without requiring laser to be of pulsed variety.
- New claim 53, hyperopia-reducing, with pulsed laser.
- New claim 54, hyperopia-reducing, without requiring laser to be of pulsed variety.
- New claim 55, myopia-reducing Fresnel, with pulsed laser.
- New claim 56, myopia-reducing Fresnel, without requiring laser of pulsed variety.
- New claim 57, hyperopia-reducing Fresnel, with pulsed laser.
- New claim 58, hyperopia-reducing Fresnel, without requiring pulsed laser.
- New claim 59, cornea-transplant preparation, with pulsed laser.
- New claim 60, cornea-transplant, without requiring pulsed laser.

These ten new claims will be seen to be in identical pairs except for the pulsed-laser requirement of claims 51, 53, 55, 57, and 59, as distinguished from no "pulsed" requirement in claims 52, 54, 56, 58, and 60. And to complete the pattern of these pairs of claims, for the astigmatism-reducing subject matter with which the present case was originally concerned, we have added claims 61 and 62, which can be briefly outlined as:

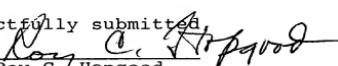
- New claim 61, astigmatism-reducing, with pulsed laser.
- New claim 62, astigmatism-reducing, without requiring pulsed laser.

All of the newly presented claims should be allowable for the same reasons that claims 29 to 60 (parent claims as tabulated above) were allowed. And in our Amendment of April 22, 1987, we have indicated belief in the allowability of the claims in this case prior to the filing of this Supplementary Amendment.

We enclose our check in the amount of \$527.00, to cover the additional-claims fee (small-entity) and authorize a charge or credit to our firm Deposit Account No. 08-2776, as may be deemed appropriate.

Allowance is requested.

Encl.

Respectfully submitted,
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